

CLAIMS

What is claimed is:

- 5 1. A method for determining triggering of a polling request in a wireless communications protocol for a transmitter, the transmitter capable of transmitting layer 2 protocol data units (PDUs), each PDU comprising an n-bit sequence number, the method comprising:
 - 10 obtaining a base sequence number $VT(A)$, the base sequence number $VT(A)$ marking a beginning sequence number of a transmitting window of the transmitter;
 - obtaining a current sequence number $VT(S)$, the current sequence number $VT(S)$ marking a sequence number of a PDU
 - 15 that is next to be transmitted by the transmitter;
 - obtaining a first value that is 2^n added to a difference of the current sequence number $VT(S)$ and the base sequence number $VT(A)$;
 - obtaining a second value that is a modulus of the first value
 - 20 with 2^n ; and
 - obtaining a test value that is the second value divided by a size of the transmitting window;
 - wherein polling is triggered when the test value is greater than or equal to a polling value.
- 25 2. The method of claim 1 wherein obtaining the second value further comprises a minimum value choosing operation with the size of the transmitting window.
- 30 3. The method of claim 1 wherein the polling value indicates a percentage of PDUs in the transmitting window that have been transmitted by the transmitter.

4. A wireless communications system comprising a transmitter capable of transmitting layer 2 protocol data units (PDUs) to a receiver, each PDU comprising an n-bit sequence number, the transmitter comprising:

a state variable VT(A) indicating a starting sequence number of a transmitting window;

a state variable VT(WS) indicating a number of PDUs spanned by the transmitting window;

a state variable VT(S) indicating a sequence number of a PDU within the transmitting window that is next to be transmitted; and

a calculation unit capable of obtaining a test value t according to a relation that comprises:

$$t = ((2^n + VT(S) - VT(A)) \bmod 2^n) / VT(WS);$$

wherein the transmitter polls the receiver when the test value t is greater than or equal to a polling value.

5. The system of claim 4 wherein the polling value indicates a percentage of PDUs in the transmitting window that have been transmitted by the transmitter.

6. A wireless communications system comprising a transmitter capable of transmitting layer 2 protocol data units (PDUs) to a receiver, each PDU comprising an n-bit sequence number, the transmitter comprising:

a state variable VT(A) indicating a starting sequence number of a transmitting window;

a state variable VT(WS) indicating a number of PDUs spanned by the transmitting window;

a state variable VT(S) indicating a sequence number of a PDU within the transmitting window that is next to be

transmitted; and

a calculation unit capable of obtaining a test value t according to a relation that comprises:

$$t = \min(((2^n + VT(S) - VT(A)) \bmod 2^n), VT(WS))/VT(WS);$$

5 wherein the transmitter polls the receiver when the test value t is greater than or equal to a polling value.

7. The system of claim 6 wherein the polling value indicates a percentage of PDUs in the transmitting window that have been
10 transmitted by the transmitter.